REMARKS

The Examiner's remembering of this numbered claim 28 is noted with appreciation.

In reviewing dependent claims, it was noted that certain sub-ranges were inadvertently not cancelled in the Preliminary Amendment. That has been remedied above. In addition, the independent claims have been amended to specify that the conductive material is a metal or metal oxide, or mixtures thereof, in accordance with original claim 11 and the specification. Claim 11 has been cancelled. A new claim 30 which finds basis in other pending claims has been presented for consideration by the Examiner.

Before the present invention, conductive inks and coatings were primarily based on solvent or water borne-thermal evaporated drying or on 2-component cross linking technology. While those compositions had high conductivity, they are slow drying and not suitable for high speed printing presses, as well as having other disadvantages. Energy cure systems have been made but these typically have significantly higher resistivity and reduced conductivity values compared to solvent or water-borne evaporated drying products. To achieve improved conductivity, increased pigment loadings were required which increased cost, and had a significant effect on the rheology and printability of the composition. The present invention is based, *inter alia*, on the discovery that the use of water-containing energy cure technology can resolve the problems of the prior art and enable the production of conductive inks which gave good print definition, adhesion and which can be applied usefully by a high speed printing

presses. The invention is not taught or suggested by the prior art applied against the claims in the present Office Action.

Claims 1-4, 11, 12, 22, 23, 25 and 26 were rejected under 35 U.S.C. 102 and claims 13-21 and 24 under 35 U.S.C. 103 over Legrande. These rejections are respectfully traversed.

The Legrande reference relates to a coating composition having electrically conductive and/or electromagnetically absorption properties because it is a unique combination of binder containing a first emulsion containing a diene and a second emulsion containing an acrylic polymer, and "effective amount" of electrically conducted particles dispersed in the binder provided that those particles are a combination of graphite and metal containing particles, and water. It is pointed out on page 10 of this reference that the combination of graphite and metal particles avoid the detrimental characteristics found in the prior art. On page 13, it is pointed out that the coating composition is an evaporated cure type composition. Also, on page 15, it is pointed out that the chemistry of the coating composition is created a unique combination of chemical resistance and adhesion properties. It is noted that the working examples all contain an amount of conductive material (graphite plus metal) which is less than 40% and conductivity is at least 1.5 ohms per square.

It is respectfully submitted that the anticipation rejection based on Legrande is not tenable with respect to the claims as amended above for at least two reasons. First, the claims require the conductive material to be metal or metal oxide or a mixture thereof whereas Legrande requires the presence of graphite. Secondly, the claims require a resistivity of no greater than 1 ohm per square. The claims are also not obvious over

Legrande because, *inter alia,* Legrande requires a critical combination containing graphite and the claimed invention omits that critical ingredients. It is noted that the Office Action states that the claimed effects of physical properties would "implicitly" be achieved by a composite with all of the claimed ingredients. That, however, merely says the claimed invention has inherent properties but it is respectfully pointed out that the reference does not teach a "composite with all of the claimed ingredients" and therefore any speculation that the claimed effects and physical properties would implicitly be present lacks the required factual basis. With respect to the stated anticipatory position that the application would contain an inadequate disclosure because there was not teaching how to obtain the claimed properties with only the claimed ingredients, it is respectfully pointed out that the application contains an extensive disclosure of the materials to be used as well as the amounts and how they are to be combined and there is very clearly an adequate teaching of how to obtain the claimed composition.

In light of the foregoing deficiencies, it is respectfully submitted that the other assertions made in the Office Action indeed not be addressed.

Claims 5 and 6 were rejected under 35 U.S.C. 103 over Legrande in view of Durand. This rejection is also respectfully traversed.

Legrande has been discussed above. It does not, as the Examiner has acknowledged, teach a binder containing certain ingredients and Durand has been cited to cure that deficiency. However, Legrande is a physically dried composition whereas Durand is a UV curable composition and there is no motivation which would cause one skilled in the art to incorporate a Durand UV curable system into the Legrande composition. The mere fact that the references are in the "same field of endeavor, namely

conductive ink" is respectfully submitted to be so vague as to be meaningless and insufficient. As previously noted and as discussed in the opening paragraphs of the application, there is an art recognized significant difference between physically dried and radiation curable compositions in this art. Just as importantly, and perhaps more importantly, nothing in Durant teaches or suggests eliminating the graphite with Legrande teaches to be critical. References cannot be combined if the effect would destroy the invention on which one of the reference patents is based, *In re Hartmann*, 186 USPQ 366 (Bd. App. 1974)

Claims 7-10, 27 and 28 were rejected under 35 U.S.C. 103 over Legrande in view of Batting.

This rejection is based on the same reasoning, with one exception, as the previous combination rejection with the Batting reference being cited to teach particular UV curable inks. It is therefore untenable for the same reasons. The "exception" is the assertion that these two references are combinable because they are in the same field of endeavor, "name UV curable inks" which is respectfully submitted to be not valid in that there is no teaching or suggestion of a UV curable ink in Legrande,

Claim 29 was rejected under 35 U.S.C. 103 over Batting in view of Legrande. This rejection is respectfully submitted to be untenable for the same reasons as the rejection based on Legrande in view of Batting. Regardless of which of the two references the base to be modified by the other, Legrande still requires graphite as an essential ingredient.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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